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NOTES FROM PACIFIC COAST OBSERVATORIES.

THE 100-INCH TELESCOPE.

During the summer considerable progress has been made on the plans for the 100-inch telescope. On Mount Wilson the foundations for the telescope building and dome were finished in July and work was begun on the great pier to support the instrument. This is now nearly completed. At its base the pier measures about 20 by 40 feet and its height is 33 feet about the ground level. The top of the pier is extended on all sides into a circular floor 52 feet in diameter, supported by heavy reinforced-concrete brackets, and from this floor a circular wall rises to the level of what will be the main floor of the steel building and dome. Provision is made in the inside of the pier for a room in which to silver the large mirror and for a water-storage tank to be used in maintaining a temperature control. At the south of the large pier is a long extension upon the face of which will be mounted spectrographs and such other apparatus as will be used with the telescope in the coudé form.

The plans for the telescope building and dome have been completed by D. H. BURNHAM & Co. of Chicago, and contracts for at least a portion of the work will be let within a short time. The diameter of the building will be about 100 feet and the height of the top of the dome 105 feet. The dome is designed to have a double roof of sheet iron with an intervening air space of about two feet, and louvres are arranged at the top of the dome to allow of the escape of the heated air. This plan has proved successful in the case of the 60-inch reflector. A shutter opening 20 feet in width is provided for the telescope, and because of this great width the construction of the dome is necessarily unusually massive. The shutter is divided vertically and consists of two portions, which move on horizontal tracks at the top and bottom. Rubber or hair cushions will be used along the faces of the two sections of the shutter to make it as nearly as possible airtight.

The design of the telescope mounting has advanced rapidly, and at present most of the general drawings are essentially complete. Detailed drawings of the north and south pedestals and the mercury tanks and floats have been sent to the Fore River Shipbuilding Corporation of Quincy, Massachusetts, which will build the more massive parts of the mounting. Castings have already been made for the two pedestals and one of the two mercury tanks. The most difficult part of the instrument from the point of view of design is probably the large polar axis and fork within which is swung the tube of the telescope. This is built up of structural steel and will be rectangular in shape, about 32 feet long and 16 feet wide. The fork will be made in four sections and will be bolted together in place on Mount Wilson. These sections will be among the heaviest parts of the telescope mounting, as each section will weigh about seven tons. The large declination bearings will be built into the side members of the fork, the steel castings forming the cases for the bearings, being riveted to the structural steel of the fork.

Work has been progressing steadily on the 100-inch mirror and recent tests have shown a figure which is very nearly spherical and with but a small amount of astigmatism. Zonal errors have been reduced greatly, and the parabolizing of the surface will be begun in a few weeks, it is hoped. A considerable amount of work has been done on the 60-inch plane mirror, which will be used in testing the 100-inch mirror during the work of parabolizing. With the edge support now in use, no evidence is found of differences of flexure along different diameters of the mirror. W. S. ADAMS.

MOUNT WILSON SOLAR OBSERVATORY.

STELLAR SPECTROSCOPIC NOTES.

Observations of the Companion of Rigel.—Four photographs, with low dispersion of the spectrum of the seventh-magnitude companion of *β Orionis* indicate that its spectrum is identical with that of the principal star. The difference in brightness, as determined by the Harvard observers, is 6.5 magnitudes, and the identity of the spectra of two stars, which almost cer-